

CLAIMS

What is claimed is:

1. A baseband direct sequence spread spectrum CDMA transceiver.
2. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 further comprising a single modulation stage.
3. The baseband direct sequence spread spectrum CDMA transceiver of Claim 2 further comprising a Hadamard function having pseudorandomly shuffled rows.
4. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 further comprising a digital-to-analog converter which converts a digital data signal into an equivalent analog signal, wherein an output of the converter is directly connected to an antenna.
5. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 further comprising an active servo system for canceling transmit signals for receive signals.
6. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1, wherein RF signals are spread across DC to 30 MHz.

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7. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 further comprising an antenna which is at least ten times shorter than the transmit signal wavelength.

8. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1, wherein the antenna is driven mismatched.

9. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 further comprising circuitry for peer-to-peer cellular communications.

6V0A' 10. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 comprising a full duplex mode of operation.

11. The baseband direct sequence spread spectrum CDMA transceiver of Claim 1 comprising a half duplex mode of operation.

12. A baseband direct sequence spread spectrum CDMA transmitter.

6V0A' 13. The baseband direct sequence spread spectrum CDMA transmitter of Claim 12 having a Hadamard function with pseudorandomly shuffled rows.

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14. The baseband direct sequence spread spectrum CDMA transmitter of Claim 12 further comprising a digital-to-analog converter which converts a digital data signal into an equivalent analog signal, wherein an output of the converter is directly connected to an antenna.

500 A' > 15. The baseband direct sequence spread spectrum CDMA transmitter of Claim 12, wherein RF signals are spread across DC to 30 MHz.

16. The baseband direct sequence spread spectrum CDMA transmitter of Claim 12 further comprising circuitry for peer-to-peer cellular communications.

500 A' > 17. The baseband direct sequence spread spectrum CDMA transmitter of Claim 1 comprising a full duplex mode of operation.

18. The baseband direct sequence spread spectrum CDMA transmitter of Claim 1 comprising a half duplex mode of operation.

19. A method for transmitting an RF signal, comprising the steps of:
modulating a data signal with a pseudo random code;
modulating the data signal with an orthogonal code;
transmitting the data signal as baseband direct sequence spread spectrum CDMA.

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20. The method of Claim 19 further comprising the step of converting a digital data signal into an equivalent analog signal which is directly transmitted by an antenna over the air.

500 A' > 21. The method of Claim 19 further comprising the step of actively servoing a transmit signal to cancel the transmit signal from a receive signal.

22. The method of Claim 19 further comprising the step of spreading a baseband signal across DC to 30 MHz.

23. The method of Claim 19 further comprising the step of using a same antenna to transmit and receive baseband signals in a full duplex mode of operation.

24. The method of Claim 19 further comprising the step of transmitting baseband signals for peer-to-peer cellular communications.

600 A' > 25. A method for transmitting an RF signal, comprising the steps of:
modulating a data signal with a Hadamard function having pseudorandomly scrambled rows;
transmitting the data signal as baseband direct sequence spread spectrum CDMA.

26. The method of Claim 25 further comprising the step of converting a digital data signal into an equivalent analog signal which is

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directly transmitted by an antenna over the air, wherein the antenna is at least ten times shorter than the wavelength of the signal being transmitted.

27. The method of Claim 25 further comprising the step of actively servoing a transmit signal to cancel the transmit signal from a receive signal.

28. The method of Claim 25 further comprising the step of spreading a baseband signal across DC to 30 MHz.

29. The method of Claim 25 further comprising the step of using a same antenna to transmit and receive baseband signals in a full duplex mode of operation.

30. The method of Claim 25 further comprising the step of transmitting baseband signals for peer-to-peer cellular communications.

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